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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,235	10/28/2003	Christopher Alan Adkins	2003-0258.01	4961

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EXAMINER	
DOUGHERTY, ANTHONY T	
ART UNIT	**PAPER NUMBER**
2863	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,235	ADKINS ET AL.	
	Examiner	Art Unit	
	Anthony T. Dougherty	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/28/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-20 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,355,927 to Snyder.

This 102 rejection relies heavily on Figure 6 of the prior art so it is included here with an explanation as to corresponding attributes with the instant application.

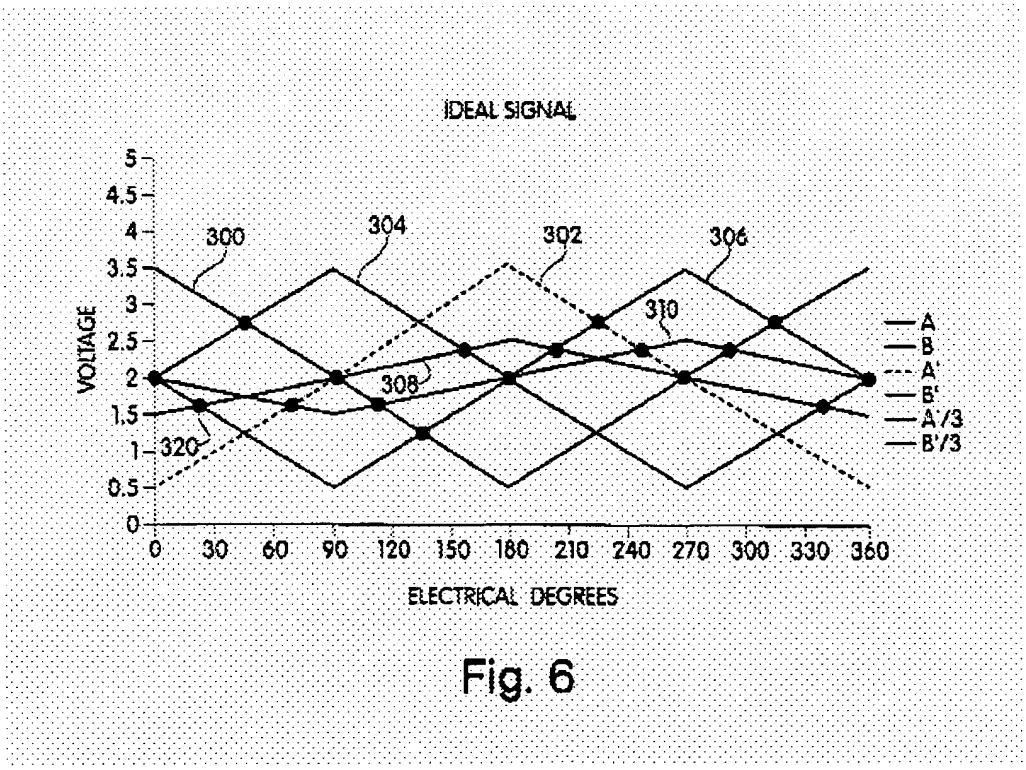

Fig. 6

As can bee seen in Figure 6 the signal indicated as A begins at a voltage of 3.5 at 0 degrees and corresponds to the first output signal of the instant application, the signal indicated as B begins at 2 volts at 0 degrees and 3.5 volts at 90 degress and corresponds to the second output signal of the instant application, and the signal B' represents the inverse of the second output signal and is at 2 volts at 0 degress and at 0.5 volts at 90 degrees.

With regard to claim 1 Snyder discloses a method for determining distance moved by a component while moving in a forward direction and coupled to an analog encoder having analog first and second signals in substantial quadrature (see abstract) by calculating an inverse signal which is the inverse of the second output signal (see column 3 line 36-38 & Figure 6), and calculating the distance moved by the component from a reference position using an ascending region of the first output signal until the first output signal reaches a high level, wherein the first high level is the crossover level of the ascending first output signal and the inverse signal (see Figure 6 the intersection indicated by a dot between 300 and 330 degrees [approx. 315°] which is the intersection of A and B'), then calculating the distance moved by the component from the position of the component when the first output signal reached the first high level using an ascending region of the second output signal until the second output signal reaches a second high level, wherein the second high level is the crossover level of the ascending second output signal and the first output signal (see Figure 6 the intersection indicated by a dot between 30 and 60 degrees [approx. 45°], which is the intersection of A and B), then calculating

the distance moved by the component from the position of the component when the second output signal reached the second high level using a descending region of the first output signal until the first output signal reaches a first low level, wherein the first low level is the crossover level of the descending first output signal and the inverse signal (see Figure 6 the intersection indicated by a dot between 120 and 150 degrees [approx. 135°], which is the intersection of A and B'), then calculating the distance moved by the component when the first output signal reached the first low level using a descending region of the second output signal until the second output signal reaches a second low level, wherein the second low level is the crossover level of the descending second output signal and the first output signal (see Figure 6 intersection without a dot of A and B between 210 and 240 degrees [approx. 235°], after which these steps are repeated (see column 3 line 36-38).

With regard to claim 10 Snyder discloses a method for determining the distance moved by a component operatively coupled to an analog encoder having analog first and second output signals (se abstract) by calculating at least one of a first inverse signal which is the inverse of the first output signal and a second inverse signal which is the inverse of the second output signal (see column 3 line 36-38 & Figure 6), calculating the distance moved by the component from a previous position using one of an ascending or descending region of the first or second output signal wherein the previous position is the position of the component corresponding to a crossover level of two signals chosen from the group consisting of the first output signal the second output signal and the at least one inverse signal (see Figure 6).

With regard to claims 2 and 11, and applying the rejection of claims 1 and 10 above, Snyder discloses the crossover level corresponding to the first high level is determined from at least one of the current value and the most recent previous value of the first output signal and the inverse signal when it has been determined that the ascending first output signal crossed the inverse signal (see Figure 6 the intersection indicated by a dot between 300 and 330 degrees [approx. 315°] which is the intersection of A and B').

With regard to claims 3 and 12, and applying the rejection of claims 1 and 10 above, Snyder discloses the analog encoder has a rotatable encoder wheel and first and second high and low levels for one revolution are previously measured and stored as a map in memory (see column 3 line 36-38 & column 5 line 10-27).

With regard to claims 4 and 13, and applying the rejection of claims 1 and 10 above, Snyder discloses updates in crossover levels (see column 5 line 10-27).

With regard to claims 5 and 14, and applying the rejection of claims 1 and 10 above, Snyder discloses using a rotary analog encoder (see column 5 line 10-27).

With regard to claims 6 and 15, and applying the rejection of claims 1 and 10 above, Snyder discloses a linear analog encoder (see column 5 line 10-27).

With regard to claims 7 and 16, and applying the rejection of claims 1 and 10 above, Snyder discloses the component is a paper-feed roller powered by a DC motor (see column 5 line 10-27).

With regard to claims 8 and 17, and applying the rejection of claims 1 and 10 above, Snyder discloses the component is a printhead carrier of a printer (see column 5 line 10-27).

With regard to claims 9 and 18, and applying the rejection of claims 1 and 10 above, Snyder discloses the ascending regions and descending regions are substantially linear regions (see column 5 line 29-45).

With regard to claim 19, and applying the rejection of claim 10 above, Snyder discloses the step of calculating the distance moved by the component using a different one of the ascending or descending region of the first or second output signal upon a crossover of two signals chosen from the group of the first output signal, the second output signal, and at least one inverse signal (see Figure 6 & column 5 line 47-57).

With regard to claim 20, and applying the rejection of claim 10 above, Snyder discloses the component is adapted to move in a forward direction and in a reverse direction (see column 5 line 10-27).

U.S. Patent No. 6,292,117 to Smith because it teaches a paper positioning system for a printer with quadrature signals and their inverse used to determine analog encoder movement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony T. Dougherty whose telephone number is (571) 272-2273. The examiner can normally be reached on Monday through Friday from 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atd

John Barlow
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